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Subject: Ham-Homebrew Digest V94 #255
To: Ham-Homebrew

Ham-Homebrew Digest Sat, 27 Aug 94 Volume 94 : Issue 255

Today's Topics:

Dipoles & 50 ohm coax

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Problems you can't solve otherwise to brian@ucsd.edu.

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We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Fri, 26 Aug 1994 14:53:28 GMT
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Subject: Dipoles & 50 ohm coax
To: ham-homebrew@ucsd.edu

Greg Dolkas (greg@core.rose.hp.com) wrote:

: All this talk about matching 75 ohms to a typical ham tranceiver reminds me of
: a question I had... BTW, most I have asked this suggest I just try it and see
: what happens :-)

: A resonant dipole antenna (yes, in the mythical Free Space) has an impedance
: of 70-odd ohms. If you hook it directly to a 50 ohm coax you will see a
: 1.5:1 SWR. You can trim the antenna to make it look like 50 ohms, but now
: it's not resonant any more, and isn't 50 ohms *resistive*; there's a
: reactance component to it. Also, a non-resonant antenna isn't as "good"
: as a resonant one.

: So, what are the alternatives? One idea is to use 70-odd ohm coax (TV Stuff)
: at the antenna end. Perfect match. The problem is how to hook that coax to

: your 50 ohm tranceiver. If you just hook it up, you'll have that 1.5 : 1
: SWR again. One school of thought is that at least this way the non-perfect
: SWR isn't over a long cable run, so your losses will be less, and maybe that
: is a better arrangement than the 50 ohm coax and a mis-match at the antenna,
: or shortening the antenna to fake out the feed point impedance.

: 50 to 75 ohm transformers don't appear to be readily accessible, and you will
: lose something in the translation. Don't know if that's better than the
: SWR mismatch (at one of the ends), or the shortened antenna.

: So, all you Dipole Experts, what is the right answer? Yes, this is somewhat
: academic, since you never really have a mythical Free Space antenna, but
: at least you will be starting from a technically sound design.

: Your thoughts?

: Greg KD6KGW

75 to 50 ohm transformers are easily made. The ARRL handbook has had
construction information. The loss is very low.

Use open wires and a matching unit. Make the dipole long enough for 80 meters
and you have a all band antenna.

Use only a single support and make an inverted vee. These tend toward a
50 ohm impedance.

Use 50 ohm cable and don't worry about the SWR, unless you have a rice
box that shuts down at 1.5, then use a matching unit.

Really, a 1.5:1 SWR is not anything to lose sleep over.

Jim, WA6SDM
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End of Ham-Homebrew Digest V94 #255
